AMENDMENTS TO THE CLAIMS

This Listing of Claims replaces all prior Listings and versions of claims in the above-identified application.

Listing of Claims

1-76. (Cancelled)

77. (Previously presented) A pharmaceutical composition comprising the fusion protein of Claim 125 in a pharmaceutically acceptable carrier.

78. (Previously presented) A composition comprising the fusion protein of Claim 125, wherein said fusion protein is dimeric and wherein said composition is essentially free of monomeric fusion protein.

79. (Cancelled)

80. (Previously presented) A nucleic acid encoding the fusion protein of Claim 125.

81. (Previously Presented) A host cell transfected or transformed with the nucleic acid of claim 80, enabling the host cell to express the fusion protein.

82. (Previously Presented) The host cell of claim 81, wherein the host cell is a eukaryotic cell.

83. (Previously Presented) The host cell of claim 82, wherein the eukaryotic cell is a mammalian cell.

84. (Previously presented) A method of producing a fusion protein of Claim 125, comprising:

a) transfecting or transforming a host cell with an expression vector comprising at least one nucleic acid encoding the fusion protein of Claim 125;

b) culturing the host cell under conditions effective to express said fusion protein; and

c) harvesting the fusion protein expressed by the host cell.

85. (Previously Presented) A method of purifying the fusion protein of Claim 125, comprising:

a) obtaining a composition comprising the fusion protein; and

b) isolating the fusion protein from contaminants by column chromatography.

86. (Previously Presented) The method of claim 85, wherein the fusion protein is isolated from contaminants by size-exclusion chromatography.

87. (Withdrawn-previously presented) A method of treating a condition treatable with erythropoietin, comprising administering an effective amount of the fusion protein of Claim 125 to a patient in need thereof.

88. (Cancelled)

89. (Withdrawn) The method of claim 87, wherein the condition is a deficient hematocrit, and wherein administration of the fusion protein increases the hematocrit of the patient.

90. (Currently Amended) A fusion protein comprising a natural human erythropoietin (EPO) joined at its carboxy-terminus by a peptide linker to the amino terminus ~~of an~~a human immunoglobulin domain that does not contain a variable region region wherein the immunoglobulin domain is selected from the group consisting of full-length IgG-Fc, IgG-C_H and IgG-C_L, wherein the peptide linker consists of between 2 and 7 amino acid residues, wherein the amino acid residues are selected from the group consisting of: glycine and serine, and wherein said fusion protein has an EC_{50} within 4 fold of the EC_{50} of non-fused EPO, on a molar basis, in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

91. (Cancelled)

92. (Previously Presented) The fusion protein of Claim 90, wherein the peptide linker consists of a mixture of 2, 4 or 7 amino acid residues selected from the group consisting of glycine and serine.

93. (Previously Presented) The fusion protein of claim 90, wherein the peptide linker is SerGly.

94. (Previously Presented) The fusion protein of claim 90, wherein the peptide linker is SerGlyGlySer (SEQ ID NO:1).

95. (Cancelled)

96. (Previously Presented) The fusion protein of Claim 90, wherein the fusion protein has an EC_{50} of less than about 1000 ng/ml in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

97-101. (Cancelled)

102. (Previously Presented) A composition comprising the fusion protein of Claim 90, wherein said fusion protein is dimeric and wherein said composition is essentially free of monomeric fusion protein.

103. (Cancelled)

104. (Previously Presented) A method of producing a fusion protein of Claim 90, comprising:

a) transfecting or transforming a host cell with an expression vector comprising at least one nucleic acid encoding the fusion protein of Claim 90;

b) culturing the host cell under conditions effective to express the fusion protein; and

c) harvesting the fusion protein expressed by the host cell.

105. (Previously Presented) The method of Claim 104, wherein said fusion protein is dimeric, and wherein said method further comprises purifying dimeric fusion protein from monomeric fusion protein.

106-124. (Cancelled)

125. (Currently amended) A fusion protein comprising a human erythropoietin protein joined without an intervening peptide linker to a human immunoglobulin (Ig) domain that does not contain a variable region wherein the Ig domain is selected from the group consisting of full-length IgG-Fc, IgG-C_H and IgG-C_L, wherein the fusion protein ~~comprises~~consists of the natural human erythropoietin amino acid sequence and the natural human immunoglobulin domain amino acid sequence at the junction of the fusion protein.

126. (Currently amended) A fusion protein ~~comprising an~~comprising a human erythropoietin protein joined without an intervening peptide linker ~~to an~~to a human

immunoglobulin (Ig) domain that does not contain a variable region wherein the Ig domain is selected from the group consisting of full-length IgG-Fc, IgG-C_H and IgG-C_L, wherein the fusion protein ~~comprises~~consists of a natural human erythropoietin amino acid sequence and a natural human immunoglobulin domain amino acid sequence at the junction of the fusion protein, and wherein the fusion protein has an EC_{50} of less than about 10 ng/ml in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

127. (Previously presented) The fusion protein of Claim 125, wherein the erythropoietin is a full-length human erythropoietin.

128. (Previously presented) The fusion protein of Claim 125, wherein said fusion protein has an EC_{50} of less than 4 ng/ml in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

129. (Previously presented) The fusion protein of Claim 125, wherein said fusion protein has an EC_{50} within 4 fold of the EC_{50} of non-fused EPO, on a molar basis, in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

130. (Cancelled)

131. (Previously Presented) The fusion protein of Claim 90, wherein the peptide linker consists of 2 amino acid residues, wherein the amino acid residues are selected from the group consisting of glycine and serine.

132. (Previously Presented) The fusion protein of Claim 90, wherein the peptide linker consists of 4 amino acid residues, wherein the amino acid residues are selected from the group consisting of glycine and serine.

133. (Previously Presented) The fusion protein of Claim 90, wherein the peptide linker consists of 7 amino acid residues, wherein the amino acid residues are selected from the group consisting of glycine and serine.

134. (Previously Presented) The fusion protein of Claim 90, wherein the peptide linker consists of 7 amino acid residues, wherein the fusion protein has an EC_{50} of less than about 10

ng/ml in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

135. (Previously Presented) The fusion protein of Claim 90, wherein the peptide linker consists of 7 amino acid residues, wherein the fusion protein has an EC_{50} of less than about 4 ng/ml in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

136. (Cancelled)

137. (Currently amended) A fusion protein ~~comprising an~~comprising a human erythropoietin protein joined without an intervening peptide linker ~~to an~~to a human immunoglobulin (Ig) domain that does not contain a variable region wherein the Ig domain is selected from the group consisting of full-length IgG-Fc, IgG-C_H and IgG-C_L, wherein the fusion protein comprises the natural human erythropoietin amino acid sequence and the natural human immunoglobulin domain amino acid sequence at the junction of the fusion protein, and wherein the fusion protein has an EC_{50} of less than about 1000 ng/ml in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line that proliferates in response to EPO.

138. (Previously presented) A fusion protein comprising erythropoietin joined at its carboxy-terminus by a peptide linker to the amino terminus of an immunoglobulin domain that does not contain a variable region, wherein the peptide linker is $Ser(GlyGlySer)_2$ (SEQ ID NO:3).

139. (Currently amended) A fusion protein comprising a natural human erythropoietin (EPO) joined at its carboxy-terminus by a peptide linker to the amino terminus of an immunoglobulin domain that does not contain a variable region wherein the immunoglobulin domain is selected from the group consisting of full-length IgG-Fc, IgG-C_H and IgG-C_L, wherein the peptide linker consists of between 2 and 7 amino acid residues, wherein the amino acid residues are selected from the group consisting of: glycine and serine, and wherein said fusion protein has an EC_{50} that is indistinguishable from the EC_{50} of the natural human erythropoietin (EPO) on a molar basis, in an EPO-dependent *in vitro* bioassay using a human UT7/epo cell line

that proliferates in response to EPO.